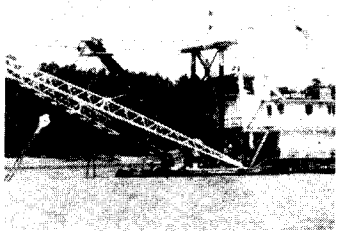

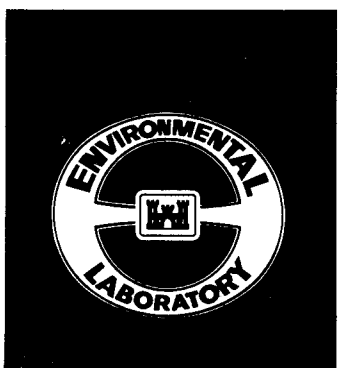

DREDGING OPERATIONS TECHNICAL SUPPORT PROGRAM

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AN ENVIRONMENTAL ASSESSMENT OF THE EFFECTS OF OPEN-WATER DISPOSAL OF MAINTENANCE DREDGED MATERIAL ON BENTHIC RESOURCES IN MOBILE BAY, ALABAMA

by

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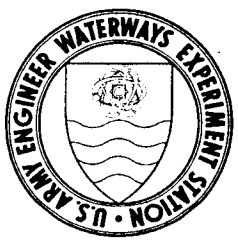

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13. ABSTRACT *(Maximum 200 words)*

Investigations were conducted to assess the spatial and temporal extent of impacts on benthic resources caused by open-water disposal of maintenance dredging materials in Mobile Bay, Alabama. Sediment profiling imagery was used in conjunction with conventional benthic grab samples to determine boundaries of a dredged material overburden and its effects on benthos immediately after disposal and at intervals of several months thereafter. Substantial effects were observed in terms of reduced benthic biomass, reduced redox potential discontinuity depth, and altered surface sediment relief. All effects were confined to within 1,500 m of the discharge point, and recovery of the benthos occurred within 12 weeks. Bay-wide surveys of benthic habitats yielded little evidence of cumulative effects of open-water disposal on benthic communities. Detected differences in benthic community parameters can be attributed to natural physical processes within the estuary, such as wind-driven circulation and sediment resuspension and prevailing salinity gradients, and do not appear to be present as a consequence of maintenance dredging open-water disposal practices.

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